

Listing of the claims

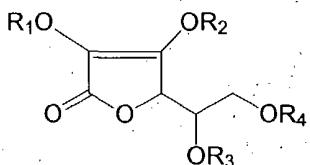
1-16 (canceled)

17. (new) A composition comprising:

from 0.2 to 5 percent by weight of a peroxide,

from 0.2 to 3 percent by weight of a metal containing material, and

from 0.1 to 3 percent by weight of a protected reducing agent characterized by the following structure

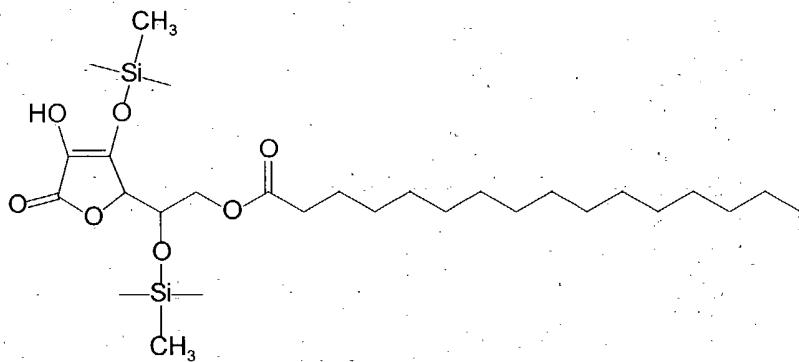


R<sub>1</sub> is a hydrogen atom, substituted or unsubstituted alkyl having from 1 to 18 carbon atoms, a substituted or unsubstituted alkenyl having from 2 to 18 carbon atoms, substituted or unsubstituted acylalkyl having from 2 to 18 carbon atoms, substituted or unsubstituted acylalkyl having from 2 to 18 carbon atoms, substituted or unsubstituted cycloalkyl having from 5 to 18 carbon atoms, substituted or unsubstituted acylcycloalkyl having from 5 to 18 carbon atoms, substituted or unsubstituted arylalkyl having from 5 to 18 carbon atoms or substituted or unsubstituted heteroarylalkyl having from 5 to 18 carbon atoms, substituted or unsubstituted acylarylalkyl having from 5 to 18 carbon atoms or substituted or unsubstituted acylheteroarylalkyl having from 5 to 18 carbon atoms, substituted or unsubstituted alkenyl arylalkyl having from 7 to 30 carbon atoms, substituted or unsubstituted acylalkyl arylalkenyl having from 7 to 30 carbon atoms, or Si(R<sub>5</sub>)<sub>3</sub>, wherein R<sub>5</sub> is substituted or unsubstituted alkyl having from 1 to 18 carbon atoms, substituted or unsubstituted cycloalkyl having from 5 to 18 carbon atoms, substituted or unsubstituted arylalkyl having from 6 to 18 carbon atoms, substituted or unsubstituted alkenyl arylalkyl having from 7 to 30 carbon atoms and

R<sub>2</sub>, R<sub>3</sub> and R<sub>4</sub> each independently are substituted or unsubstituted alkyl having from 1 to 18 carbon atoms, substituted or unsubstituted alkenyl having from 2 to 18 carbon atoms, substituted or unsubstituted acylalkyl having from 2 to 18 carbon atoms, substituted or unsubstituted acylalkyl having from 2 to 18 carbon atoms, substituted or unsubstituted cycloalkyl having from 5 to 18 carbon atoms, substituted or unsubstituted acylcycloalkyl having from 5 to 18 carbon atoms, substituted or unsubstituted arylalkyl having from 5 to 18 carbon atoms or substituted or

unsubstituted heteroarylalkyl having from 5 to 18 carbon atoms, substituted or unsubstituted acylarylalkyl having from 5 to 18 carbon atoms or substituted or unsubstituted acylheteroarylalkyl having from 5 to 18 carbon atoms, substituted or unsubstituted alkenyl arylalkyl having from 7 to 30 carbon atoms, substituted or unsubstituted acylalkyl arylalkyl having from 7 to 30 carbon atoms, or Si(R<sub>5</sub>)<sub>3</sub>, wherein R<sub>5</sub> is substituted or unsubstituted alkyl having from 1 to 18 carbon atoms, substituted or unsubstituted alkenyl having from 2 to 18 carbon atoms, substituted or unsubstituted cycloalkyl having from 5 to 18 carbon atoms, substituted or unsubstituted arylalkyl having from 6 to 18 carbon atoms, substituted or unsubstituted alkyl arylalkyl having from 7 to 30 carbon atoms.

18. (new) The composition of claim 17 wherein said protected reducing agent is



19. (new) The composition of claim 17 wherein said peroxide is a diacyl peroxide, a perester, a perketale, a peroxy dicarbonate, a dialkyl peroxide, a ketone peroxide, a alkyl hydroperoxide, 2,5-dimethyl-2,5-di(benzoylperoxy)hexane, tert.-butylamyl peroxide, di-(tert.-butyl) peroxide, cumen hydo peroxide, tert.-butylhydro peroxide, tert.-butyl-peroxy-(3,5,5-trimethyl hexanoate), tert.-butylperoxy benzoate and tert.-butylperoxy-2-ethylhexyl carbonate.

20.(new) The composition of claim 17 further comprising an amine.

21. (new) The composition of claim 17 wherein said peroxide decomposes by at most fifty percent by weight of said peroxide within 10 hours at a temperature of at least 75 °C.

22. (new) The composition of claim 20 wherein said amine comprises up to 1 percent by weight of said composition and said amine is an alkyl aryl amine, a dialkyl aryl amine or a trialkyl amine.

23.(new) The composition of claim 20 wherein said amine comprises from 0.001 to 0.5 percent by weight of said composition.

24. (new) The composition of claim 20 wherein said amine comprises from 0.01 to 0.2 percent by weight of said composition.

25. (new) The composition of claim 17 wherein said metal containing material is a salt of a metal or an organo-metallic compound.

26. (new) The composition of claim 17 wherein said metal of said metal containing material is selected from the group consisting of copper, silver, cerium, iron, chromium, nickel, vanadium and manganese.

27. (new) The composition of claim 17 wherein said metal containing material is a acetate, salicylate, naphenoate, thiourea complex, acetylacetone or ethylene tetramine acidic acid.

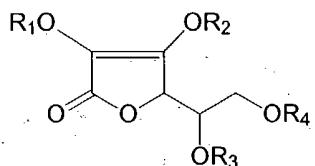
28. (new) The composition of claim 17 further comprising from 10 to 30 weight percent of an acidic monomer, 15 to 35 weight percent of a polymerizable monomer, 50 to 65 weight percent of filler.

29. (new) The composition of claim 17 further comprising from 5 to 25 weight percent of an acidic monomer, 5 to 20 weight percent of a polymerizable monomer, 50 to 85 weight percent of filler.

30. (new) The composition of claim 17 further comprising 15 to 55 weight percent of an acidic monomer, 20 to 40 weight percent of a polymerizable monomer, 10 to 50 weight percent of filler.

31. (new) A method comprising:

providing a composition comprising from 0.2 to 5 percent by weight of a peroxide, from 0.2 to 3 percent by weight of a metal containing material, and from 0.1 to 3 percent by weight of a protected reducing agent characterized by the following structure



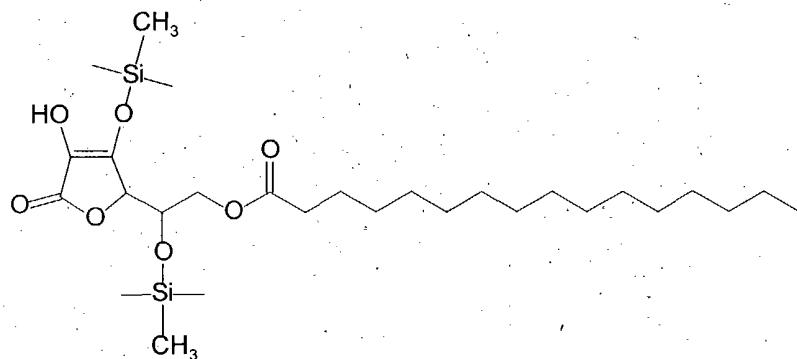
$\text{R}_1$  is a hydrogen atom, substituted or unsubstituted alkyl having from 1 to 18 carbon atoms, a substituted or unsubstituted alkenyl having from 2 to 18 carbon atoms, substituted or unsubstituted acylalkyl having from 2 to 18 carbon atoms, substituted or unsubstituted acylalkyl having from 2 to 18 carbon atoms, substituted or unsubstituted cycloalkyl having from 5 to 18 carbon atoms, substituted or unsubstituted acylcycloalkyl having from 5 to 18 carbon atoms, substituted or unsubstituted arylalkyl having from 5 to 18 carbon atoms or substituted or unsubstituted heteroarylalkyl having from 5 to 18 carbon atoms; substituted or unsubstituted acylarylalkyl having from 5 to 18 carbon atoms or substituted or unsubstituted acylheteroarylalkyl having from 5 to 18 carbon atoms, substituted or unsubstituted alkenyl arylalkyl having from 7 to 30 carbon atoms, substituted or unsubstituted acylalkyl arylalkenyl having from 7 to 30 carbon atoms, or  $\text{Si}(\text{R}_5)_3$ , wherein  $\text{R}_5$  is substituted or unsubstituted alkyl having from 1 to 18 carbon atoms; substituted or unsubstituted cycloalkyl having from 5 to 18 carbon atoms, substituted or unsubstituted arylalkyl having from 6 to 18 carbon atoms, substituted or unsubstituted alkenyl arylalkyl having from 7 to 30 carbon atoms and

$\text{R}_2$ ,  $\text{R}_3$  and  $\text{R}_4$  each independently are substituted or unsubstituted alkyl having from 1 to 18 carbon atoms, substituted or unsubstituted alkenyl having from 2 to 18 carbon atoms, substituted or unsubstituted acylalkyl having from 2 to 18 carbon atoms, substituted or unsubstituted acylalkyl having from 2 to 18 carbon atoms, substituted or unsubstituted cycloalkyl having from 5 to 18 carbon atoms, substituted or unsubstituted acylcycloalkyl having from 5 to 18 carbon atoms, substituted or unsubstituted arylalkyl having from 5 to 18 carbon atoms or substituted or unsubstituted heteroarylalkyl having from 5 to 18 carbon atoms, substituted or unsubstituted acylarylalkyl having from 5 to 18 carbon atoms or substituted or unsubstituted acylheteroarylalkyl having from 5 to 18 carbon atoms, substituted or unsubstituted alkenyl arylalkyl having from 7 to 30 carbon atoms, substituted or unsubstituted acylalkyl arylalkenyl having from 7 to 30 carbon atoms, or  $\text{Si}(\text{R}_5)_3$ , wherein  $\text{R}_5$  is substituted or unsubstituted alkyl having from 1 to 18 carbon atoms; substituted or unsubstituted cycloalkyl having from 5 to 18 carbon atoms, substituted or unsubstituted arylalkyl having from 6 to 18 carbon atoms, substituted or unsubstituted alkenyl arylalkyl having from 7 to 30 carbon atoms and

acylheteroarylalkyl having from 5 to 18 carbon atoms, substituted or unsubstituted alkenyl arylalkyl having from 7 to 30 carbon atoms, substituted or unsubstituted acylalkyl arylalkyl having from 7 to 30 carbon atoms, or  $\text{Si}(\text{R}_5)_3$ , wherein  $\text{R}_5$  is substituted or unsubstituted alkyl having from 1 to 18 carbon atoms, substituted or unsubstituted alkenyl having from 2 to 18 carbon atoms, substituted or unsubstituted cycloalkyl having from 5 to 18 carbon atoms, substituted or unsubstituted arylalkyl having from 6 to 18 carbon atoms, substituted or unsubstituted alkyl arylalkyl having from 7 to 30 carbon atoms, and

applying said composition to a tooth in a patient's mouth.

32. (new) The method of claim 31 wherein said protected reducing agent is



33. (new) The method of claim 31 wherein said peroxide is a diacyl peroxide, a perester, a perketale, a peroxy dicarbonate, a dialkyl peroxide, a ketone peroxide or a alkyl hydroperoxide.

34. (new) The method of claim 31 wherein said peroxide is selected from the group consisting of 2,5-dimethyl-2,5-di(benzoylperoxy)hexane, tert.-butylamyl peroxide, di-(tert.-butyl) peroxide, cumen hydro peroxide, tert.-butylhydro peroxide, tert.-butyl-peroxy-(3,5,5-trimethyl hexanoate), tert.-butylperoxy benzoate and tert.-butylperoxy-2-ethylhexyl carbonate.

35. (new) The method of claim 31 wherein said composition further comprises an amine.

36. (new) The method of claim 31 wherein said peroxide decomposes by at most fifty percent by weight of said peroxide within 10 hours at a temperature of at least 75 °C.

37. (new) The method of claim 35 wherein said amine comprises up to 1 percent by weight of said composition and said amine is an alkyl aryl amine, a dialkyl aryl amine or a trialkyl amine.

38. (new) The method of claim 35 wherein said amine comprises from 0.001 to 0.5 percent by weight of said composition.

39. (new) The method of claim 31 further comprising polymerizing said composition to form a polymeric cement, polymeric composite filling material, or a polymeric sealer.

40. (new) The method of claim 31 wherein said composition further comprises from 10 to 30 weight percent of an acidic monomer, 15 to 35 weight percent of a polymerizable monomer, 50 to 65 weight percent of filler.

41. (new) The method of claim 31 wherein said composition further comprises from 5 to 25 weight percent of an acidic monomer, 5 to 20 weight percent of a polymerizable monomer, 50 to 85 weight percent of filler.

42. (new) The method of claim 31 wherein said composition further comprises 15 to 55 weight percent of an acidic monomer, 20 to 40 weight percent of a polymerizable monomer, 10 to 50 weight percent of filler.

#### REMARKS

The claims are believed to be allowable. Such action is respectfully requested.

Respectfully submitted,

  
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